

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A method for manufacturing a thin film transistor comprising the steps of:

forming a semiconductor film comprising amorphous silicon over a substrate;
crystallizing said semiconductor film by irradiating a first laser light;

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patterning the crystallized semiconductor film to form first and second semiconductor islands;

forming an insulating film comprising silicon oxide on each of said first and second semiconductor islands by a ~~vapor phase deposition~~ plasma CVD using TEOS at a temperature of 200 to 400 °C[.];

irradiating ~~an intense~~ a second laser light to said insulating film; and

forming a gate electrode on said insulating film.

2. (Currently amended) The method of claim 1 wherein said ~~intense light is an IR~~ light second laser light is a pulse laser light.

3. (Currently amended) The method of claim 1 wherein said ~~vapor phase deposition is performed by a plasma CVD or a low pressured CVD~~ second laser light has an energy density of 250 to 300 mJ/cm².

4. (Currently amended) The method of claim 1 wherein the irradiation of said ~~intense~~ second laser light is performed in order to reduce an interfacial layer density to 10¹¹ cm⁻² or lower.

5. (Currently amended) The method of claim 1 wherein ~~said laser light~~ at least one of said first and second laser lights is selected from the group consisting of KrF excimer laser, ArF, excimer laser XeCl excimer laser and XeF excimer laser.

6. (Currently amended) A method for manufacturing a thin film transistor comprising the steps of:

forming a semiconductor film comprising amorphous silicon over a substrate;

crystallizing said semiconductor film by irradiating a first laser light;
patterning the crystallized semiconductor film to form first and second semiconductor islands;

forming an insulating film comprising silicon oxide on each of said first and second semiconductor islands by a ~~vapor phase deposition~~ plasma CVD using TEOS at a temperature of 200 to 400 °C[.]; and

irradiating ~~an intense~~ a second laser light to said insulating film in an atmosphere comprising an oxygen gas.

7. (Currently amended) The method of claim 6 wherein said ~~intense light is an IR light~~ second laser light is a pulse laser light.

8. (Currently amended) The method of claim 6 wherein said ~~vapor phase deposition is performed by a plasma CVD or a low pressured CVD~~ second laser light has an energy density of 250 to 300 mJ/cm².

9. (Currently amended) The method of claim 6 wherein the irradiation of said ~~intense~~ second laser light is performed in order to reduce an interfacial layer density to 10¹¹ cm⁻² or lower.

10. (Currently amended) The method of claim 6 wherein ~~said laser light~~ at least one of said first and second laser lights is selected from the group consisting of KrF excimer laser, ArF, excimer laser XeCl excimer laser and XeF excimer laser.

11. (Currently amended) A method for manufacturing a thin film transistor comprising the steps of:

forming a semiconductor film comprising amorphous silicon over a substrate;
crystallizing said semiconductor film by irradiating a first laser light;
patterning the crystallized semiconductor film to form first and second semiconductor islands;

forming an insulating film comprising silicon oxide on each of said first and second semiconductor islands by a ~~vapor phase deposition~~ plasma CVD using TEOS at a temperature of 200 to 400 °C[.];

irradiating ~~an intense~~ a second laser light to said insulating film in an atmosphere comprising an oxygen gas; ~~and~~

forming a gate electrode on said insulating film;

introducing phosphorus into said first and second semiconductor islands; and

introducing boron into said second semiconductor island,

wherein a dose amount of said boron is larger than that of said phosphorus.

12. (Currently amended) The method of claim 11 wherein said ~~intense light is an IR light~~ second laser light is a pulse laser light.

13. (Currently amended) The method of claim 11 wherein said ~~vapor phase deposition is performed by a plasma CVD or a low pressured CVD~~ second laser light has an energy density of 250 to 300 mJ/cm².

14. (Currently amended) The method of claim 11 wherein ~~said laser light~~ at least one of said first and second laser lights is selected from the group consisting of KrF excimer laser, ArF, excimer laser XeCl excimer laser and XeF excimer laser

15. (Withdrawn) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising amorphous silicon over a substrate;
providing said semiconductor film with a crystallization promoting material;

crystallizing said semiconductor film by heating;

forming an insulating film on the crystallized semiconductor film by a vapor phase deposition; and

thermal annealing said insulating film in an atmosphere comprising an oxygen.

16. (Withdrawn) The method of claim 15 wherein said thermal annealing step is performed at a temperature from 1000 to 1200° C.

17. (Withdrawn) The method of claim 15 wherein said vapor phase deposition is a plasma CVD and a low pressured CVD.

18. (Withdrawn) The method of claim 15 wherein said thermal annealing step is performed in order to reduce an interfacial layer density to 10^{11} cm⁻² or lower.

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19. (Withdrawn) The method of claim 15 wherein said crystallization promoting material comprises a metal selected from the group consisting of Ni, Fe, Co, Ru, Rh, Pd, Os, Ir, Pt, Sc, Ti, V, Cr, Mn, Cu, Zn, Au and Ag.

20. (Withdrawn) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising amorphous silicon over a substrate;
providing said semiconductor film with a crystallization promoting material;
crystallizing said semiconductor film by heating;
forming an insulating film comprising silicon oxide on the crystallized semiconductor film by a vapor phase deposition; and
thermal annealing said insulating film in an atmosphere comprising an oxygen gas.

21. (Withdrawn) The method of claim 20 wherein said thermal annealing step is performed at a temperature from 1000 to 1200 °C.

22. (Withdrawn) The method of claim 20 wherein said vapor phase deposition is a plasma CVD and a low pressured CVD.

23. (Withdrawn) The method of claim 20 wherein said thermal annealing step is performed in order to reduce an interfacial layer density to 10^{11} cm⁻² or lower.

24. (Withdrawn) The method of claim 20 wherein said crystallization promoting material comprises a metal selected from the group consisting of Ni, Fe, Co, Ru, Rh, Pd, Os, Ir, Pt, Sc, Ti, V, Cr, Mn, Cu, Zn, Au and Ag.

25. (Withdrawn) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film comprising amorphous silicon over a substrate;

providing said semiconductor film with a crystallization promoting material;

crystallizing said semiconductor film by heating;

forming an insulating film comprising silicon oxide on the crystallized semiconductor film by a vapor phase deposition; and

thermal annealing said insulating film in an atmosphere comprising an oxygen gas in order to reduce an interfacial layer density to 10^{11} cm^{-2} or lower.

26. (Withdrawn) The method of claim 25 wherein said thermal annealing step is performed at a temperature from 1000 to 1200°C.

27. (Withdrawn) The method of claim 25 wherein said vapor phase deposition is a plasma CVD and a low pressured CVD.

28. (Withdrawn) The method of claim 25 wherein said crystallization promoting material comprises a metal selected from the group consisting of Ni, Fe, Co, Ru, Rh, Pd, Os, Ir, Pt, Sc, Ti, V, Cr, Mn, Cu, Zn, Au and Ag.

29. (Currently amended) The method of claim 11 wherein the irradiation of said ~~intense~~ second laser light is performed in order to reduce an interfacial layer density to 10^{11} cm^{-2} or lower.

30. (Currently amended) A method for manufacturing a thin film transistor comprising the steps of:

forming a crystalline semiconductor film over a substrate;

patterning the crystallized semiconductor film to form first and second semiconductor islands;

forming an insulating film comprising silicon oxide on each of said first and second semiconductor islands by a ~~vapor phase deposition~~ plasma CVD using TEOS at a temperature of 200 to 400 °C[.];

irradiating ~~an intense~~ a laser light to said insulating film;

forming a gate electrode on said insulating film;

introducing phosphorus into said first and second semiconductor islands; and

introducing boron into said second semiconductor island,

wherein a dose amount of said boron is larger than that of said phosphorus.

31. (Currently amended) The method of claim 30 wherein said ~~intense light is an IR~~ light laser light is a pulse laser light.

32. (Currently amended) The method of claim 30 wherein said ~~vapor phase deposition is performed by a plasma CVD or a low pressured CVD~~ laser light has an energy density of 250 to 300 mJ/cm².

33. (Currently amended) The method of claim 30 wherein the irradiation of said ~~intense~~ laser light is performed in order to reduce an interfacial layer density to 10¹¹ cm⁻² or lower.

34. (Currently amended) A method for manufacturing a thin film transistor comprising the steps of:

forming a crystalline semiconductor film over a substrate;

patterning the crystallized semiconductor film to form first and second semiconductor islands;

forming an insulating film comprising silicon oxide on each of said first and second semiconductor islands by a ~~vapor phase deposition~~ plasma CVD using TEOS at a temperature of 200 to 400 °C[.];

irradiating ~~an intense~~ a laser light to said insulating film in an atmosphere comprising an oxygen gas;

forming a gate electrode on said insulating film;

introducing phosphorus into said first and second semiconductor islands; and

introducing boron into said second semiconductor island,

wherein a dose amount of said boron is larger than that of said phosphorus.

F1 35. (Currently amended) The method of claim 34 wherein said ~~intense light is an IR~~ light laser light is a pulse laser light.

36. (Currently amended) The method of claim 34 wherein said ~~vapor phase deposition is performed by a plasma CVD or a low pressured CVD~~ laser light has an energy density of 250 to 300 mJ/cm².

37. (Currently amended) The method of claim 34 wherein the irradiation of said ~~intense~~ laser light is performed in order to reduce an interfacial layer density to 10^{11} cm⁻² or lower.
